Claims 1 and 4 – 15 are pending; claims 2 and 3 being canceled by this Amendment.

The limitations of claim 3 have been added to claim 1. In addition, claim 1 has been amended to reflect that the spherulites do not comprise an anisotropic filler particle. It is apparent from the text that the word "consist" is clearly in error, and that the spherulites cannot consist of a filler particle, but could "comprise" one. Accordingly, no new material is added.

The Examiner has imposed a restriction requirement between Claims 1 – 11 and 13 – 15, drawn to a thermoformable film (denoted Group I by the Examiner), and claim 12, drawn to the process of producing the flat thermoformable film (denoted Group II by the Examiner). Applicants provisionally elected Group I, claims 1 – 11 and 13 – 15, with traverse, and now affirm that election, with traverse.

Reconsideration and withdrawal of the restriction requirement is respectfully requested. Any search of thermoformable film itself is certain to include a search of the process for producing it, and any search of the process would also turn up the products made by that process. Accordingly, no additional burden would be placed on the Patent Office in searching both groups together. By contrast, a very great burden will be placed on Applicants if this restriction requirement is maintained. Applicants will be subjected to twice the cost and effort in prosecuting two patent applications for an

invention that should have been included in one, and will also be subjected to the continuing expense of maintaining two separate patents, whereas only one should be required to cover the full invention.

In addition, an additional burden will be placed on the public, in that the full scope of Applicants' invention will not be ascertainable from a single patent, and the public will have to find and study two separate patents to ascertain the full scope of Applicants' exclusive rights.

The great additional burden that will be placed on Applicants and the public in maintaining the restriction requirement is far greater than the slight, if any, inconvenience that will be placed on the Patent Office in withdrawing the restriction requirement.

It is therefore respectfully requested that the Restriction Requirement be withdrawn.

In the event that the Examiner does not find it possible to withdraw the Restriction Requirement, it is respectfully requested that the non-elected subject matter be rejoined with the elected subject matter upon allowance of elected subject matter.

Claims 13 and 14 stand rejected under 35 U.S.C. 112, second paragraph, as well as under 35 U.S.C. 101, for reciting a "use" without setting forth any steps.

These claims have now been amended, and the amendments are believed to overcome the rejection. This rejection should accordingly now be withdrawn.

Claims 1 – 4, 11, 14 and 15 stand rejected under 35 U.S.C. 103(a) [102(b)?] as anticipated by Khanna et al. in view of Mizutani.

Applicants wish to emphasize the inventive features of the thermoformable film which are the subject of the present invention.

It is important that the solid fillers are anisotropic and nanoscalic having in at least one direction an average size of not more than 10 nm and in at least one second direction perpendicular to the first direction a size of at least 50 times the size of the first direction.

It is also important that only a certain amount of from 0.01 to 4% per weight, of the anisotropic nanoscalic filler is present in the polyamide layer;

It is also important that the polyamide layer containing the anisotropic nanoscalic filler has individual spherulites and that the number average distance between these individual spherulites in the polyamide layer is not more than 50 nm, and

The majority of the spherulites (according to page 9 at least 51% of the individual

spherulites) do not comprise an anisotropic nanoscalic filler particle.

In addition, these crystallites (individual spherulites) preferably have a crystallite size of at most 25 nm, as disclosed on page 9.

All these features are important in order to provide a thermoformable film which can not only be thermoformed very easily, but also shows excellent optical properties besides an excellent film stability (disclosed as web-tension and rate of elongation) which is necessary for the production of excellent packaging without problems.

The importance of the combination of these inventive features has been exemplified in the comparison tests disclosed in the present application; for instance by substituting the anisotropic nanoscalic filler with an isotropic filler (comparison example V 2.2) with the result that the optical properties as well as the film stability is considerably inferior in comparison to an inventive film (example B2.4). Further, if the distance between the individual spherulites is not given and the spherulites emanate from the filler material like an anisotropic filler (comparison example V 2.3), the thermoforming properties are worse than these properties of the inventive film.

The inventive film is produced by extruding the molten polymer optionally through a slot and cooling and solidifying the extruded polymer melt to form a solid film as quickly as possible on a rotating cooling roll having a temperature of at most 70°C,

preferably 20°C. Especially this process step guarantees that very fine spherulites do not emanate from anisotropic nanoscalic fillers and have a distance between them of not more than 50 nm.

U.S. Patent 5,496,918 (Khanna) discloses articles (molded articles) containing a reduced content of oligomeric polyamides by extracting the polyamide before it is used to mold an article by a melt processing. According to the disclosure on column 8, line 62 ff., the addition of a nucleating agent is not critical and the material mentioned there is by no means anisotropic or nanoscalic. In column 5, it is disclosed that the differential scanning calometry (DSC) is used to show the effect of the amount of oligomeric polyamide on the melting point respectively solidification (crystallization) of a polyamide. Here again, not a production process but a method for measuring the melting point is disclosed, which comprises the indication of the cooling rate.

In the absence of hindsight reconstruction, there is no reason why a person skilled in the art would substitute the fillers used in the polyamide composition of Khanna, which fillers are only optionally used, and which fillers are isotropic, by anisotropic fillers such as montmorillonite known from U.s. Patent 5,504,128 (Mizutani).

Mizutani does not teach or suggest a polyamide but polyimide thermoplastic materials. According to column 10, fillers as reinforcing agent of a various kind can be added. These fillers are by no means nanoscalic and are added in an amount which is

much, much higher than according to the present invention. In the event that the Examiner is referring to the disclosure in column 10, line 14 ff. concerning the nucleating agent, it should be noted that various kinds of nucleating agents, without differentiation between isotropic, anisotropic or any hint for their size, are disclosed.

There is accordingly no basis upon which these two references could be combined. Even if these two references were combined, Applicants' invention would not be arrived at, as discussed above.

This combination of references cannot possibly render Applicants' claims anticipated as obvious, and the rejection of claims 1 – 4, 11, 14 and 15 under 35 U.S.C. 103(a) [102(b)?] as anticipated by or obvious over Khanna in view of Mizutani should be withdrawn.

Claims 5, 7 – 10 and 13 – 15 stand rejected under 35 U.S.C. 103(a) as obvious over Ramesh in view of the combined teachings of Khanna and Mizutani.

The Examiner relies on Ramesh for a teaching of a multi-layer film having layers of polyamides, but acknowledges that Ramesh has nothing to do with nucleating agents.

Ramesh cannot therefore overcome any of the deficiencies of Khanna and Mizutani discussed above, and the rejection of claims 5, 7 – 10 and 13 – 15 under 35

U.S.C. 103(a) as obvious over Ramesh in combination with Khanna and Mizutani should now be withdrawn.

Claims 7 – 8, 10 and 14 – 15 stand rejected under 35 U.S.C. 103(a) as obvious over Frisk in view of the combined teachings of Khanna and Mizutani.

The Examiner acknowledges that Frisk does not teach the inclusion of nucleating agents in the polyamide layer, the aspect ratio of the nucleating agent or the distance between the spherulites in the nucleated film.

Frisk cannot therefore in any way compensate for the deficiencies of Khanna and Mizutani, discussed above. The rejection of claims 7 – 8, 10 and 14 – 15 under 35 U.S.C. 103(a) as obvious over Frisk in view of the combined teachings of Khanna and Mizutani should now be withdrawn.

Finally, claims 6 and 10 stand rejected under 35 U.S.C. 103(a) as obvious over Harada in view of the combined teachings of Khanna and Mizutani.

The Examiner relies on Harada for epsilon-caprolactam and/or a layer of polyolefins. Neither epsilon-caprolactam nor polyolefins could possibly overcome the differences between Applicants' invention and anything that could be learned from Khanna and/or Mizutani, as discussed above.

The rejection of claims 6 and 10 under 35 U.S.C. 103(a) as obvious over Harada in view of the combined teachings of Khanna and Mizutani should accordingly now be withdrawn.

In view of the present amendments and remarks, it is believed that claims 1 and 4 – 15 are now in condition for allowance. Reconsideration of said claims by the Examiner is respectfully requested and the allowance thereof is courteously solicited.

CONDITIONAL PETITION FOR EXTENSION OF TIME

If any extension of time for this response is required, applicant requests that this be considered a petition therefor. Please charge the required Petition fee to Deposit Account No. 14-1263.

MARKED-UP COPIES OF AMENDED SPECIFICATION,
SHOWING CHANGES RELATIVE TO PREVIOUS VERSION

Claim 1 (amended). A thermoformable film comprising at least one layer of polyamide containing solid anisotropic fillers in an amount of between 0.01% and 4%, relative to the total weight of said at least one layer, [solid anisotropic fillers] and individual spherulites, wherein, said anisotropic fillers in said layer have in at least one first direction a size, expressed as the number-weighted average size for all of the dispersed components of the fillers, of no more than 10 nm and in at least one second direction perpendicular to said first direction a size of at least 50 times the size in the first direction, the number-average distance between the individual spherulites in said layer is no more than 50 nm, and the cores of the majority of the spherulites do not [consist of] comprise an anisotropic filler particle.

Claim 13 (amended). A method [of using the film of Claim 1] for the production of containers which comprises forming said containers of the film of Claim 1 on form/fill/seal machines.

Claim 14 (amended). A method of [using the film of Claim 1 for] packaging foodstuffs which comprises packaging said foodstuffs in the film of Claim 1.